

In the Claims

Please amend claims 1 and 28, and add newly presented claims 29-31 as follows:

1. (amended) A motor provided in a turbo-molecular pump, comprising:

a rotary shaft including a magnet; and

a bearing for radially supporting the rotary shaft, wherein the bearing includes:

a cylindrical rotary member connected to the rotary shaft over the magnet;

a cylindrical fixed surface surrounding the rotary member, wherein the fixed surface is spaced from the rotary member by a predetermined distance, and wherein the materials of the rotary member and the fixed surface are selected so that the material of the rotary member has a coefficient of thermal expansion that is smaller than that of the material of the fixed surface; and

armature coils arranged about a peripheral surface of the fixed surface to rotate the rotary shaft.

28. (amended) A method for producing a brushless motor of a turbo-molecular pump having a rotary shaft including a magnet and an air bearing, wherein the air bearing includes a cylindrical rotary member connected to the rotary shaft over the magnet, and a cylindrical fixed surface covering the rotary shaft, the method comprising the step of:

selecting materials for the rotary member and the fixed surface so that the material of the rotary member has a coefficient of thermal expansion that is smaller than that of the material of the fixed surface; and

assembling the rotary member and the fixed surface so that the fixed surface surrounds the rotary member and the fixed surface is spaced from the rotary member by a predetermined distance.

29. (newly presented) A motor provided in a compressor, comprising:

a rotary shaft including a magnet; and

a bearing for radially supporting the rotary shaft, wherein the bearing includes:

a cylindrical rotary member connected to the rotary shaft over the magnet;

a cylindrical fixed surface surrounding the rotary member, wherein the fixed surface is spaced from the rotary member by a predetermined distance, and wherein the materials of the rotary member and the fixed surface are selected so that the material of the rotary member has a coefficient of thermal expansion that is smaller than that of the material of the fixed surface; and

armature coils arranged about a peripheral surface of the fixed surface to rotate the rotary shaft.

30. (newly presented) A motor provided in a compressor, comprising:

a rotary shaft including a magnet;

a bearing for radially supporting the rotary shaft, wherein the bearing includes:

a cylindrical rotary member connected to the rotary shaft over the magnet; and

a cylindrical fixed surface surrounding the rotary member, wherein the fixed surface is spaced from the rotary member by a predetermined distance, and wherein the

rotary member is made of a material having a coefficient of thermal expansion that is $5 \times 10^{-6}/^{\circ}\text{C}$ or less; and

armature coils arranged about a peripheral surface of the fixed surface to rotate the rotary shaft.

31. (newly presented) A method for producing a brushless motor of a compressor having a rotary shaft and an air bearing, wherein the air bearing includes a cylindrical rotary member connected to the rotary shaft, and a cylindrical fixed surface covering the rotary shaft, the method comprising the step of:

selecting materials for the rotary member and the fixed surface so that the material of the rotary member has a coefficient of thermal expansion that is smaller than that of the material of the fixed surface; and

assembling the rotary member and the fixed surface so that the fixed surface surrounds the rotary member and the fixed surface is spaced from the rotary member by a predetermined distance.